

**Amendments to the Claims:** This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1.-13. (Cancelled).

14. (Previously Cancelled).

15.-61. (Cancelled).

62. (Previously Cancelled).

63.-77. (Cancelled).

78. (New) A method for producing an optical element, comprising:

a step of forming a proton exchange layer in an  $\text{LiNb}_x\text{Ta}_{1-x}\text{O}_3$  ( $0 \leq X \leq 1$ ) substrate;

a high-temperature annealing step of performing a heat treatment for the substrate at a temperature of  $150^\circ\text{C}$  or higher; and

a low-temperature annealing step of performing a heat treatment for the substrate at a temperature of  $120^\circ\text{C}$  or lower for 1 hour or more so as to mitigate strain introduced in the proton exchange layer by the high-temperature annealing step.

79. (New) A method for producing an optical element according to claim 78, wherein the low-temperature annealing step is performed at a temperature equal to or higher than  $50^\circ\text{C}$  but lower than or equal to  $90^\circ\text{C}$ .

80. (New) A method for producing an optical element according to claim 78, wherein the low-temperature annealing step comprises a step of gradually lowering the temperature from  $100^\circ\text{C}$  to  $60^\circ\text{C}$  over 30 hours.

81. (New) A method for producing an optical element according to claim 78, further comprising:

a step of forming a plurality of periodically-arranged domain inverted layers in the substrate.

82. (New) A method for producing an optical element, comprising:

a step of performing a proton exchange process for an  $\text{LiNb}_x\text{Ta}_{1-x}\text{O}_3$  ( $0 \leq X \leq 1$ ) substrate;

a first annealing step of performing a first heat treatment for the substrate at a first temperature, after performing the proton exchange process; and

a second annealing step of performing a second heat treatment for the substrate at a second temperature, after performing the first heat treatment,

wherein the second temperature is lower than the first temperature by 200°C or more.

83. (New) A method for producing an optical element according to claim 82, wherein the second annealing step is performed at a temperature equal to or higher than 50°C but lower than or equal to 90°C.

Respectfully submitted,

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*Kathleen Libby*  
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